STATIONS

1. DESCRIPTION. The airplane is divided into reference points in inches, designated as station numbers. These station numbers provide a means for quickly identifying the location of components, the center of gravity, and the distribution of weight. There are three axes used in the plotting of station numbers: The lateral or X-axis, the longitudinal or Y-axis, and the vertical or Z-axis.

   a. Glossary of Terms.

      (1) FRP — The fuselage reference plane is used as a basic reference. It extends along the fuselage cusps which are formed by the intersection of the upper and lower sections of the fuselage. The reference plane has an angle of one degree nose down with reference to the ground and is the origin of Z-stations.

      (2) WRP — The wing reference plane contains the trailing edge of the wing and has an angle of dihedral of 6-1/2 degrees to the FRP.

      (3) VRP — The vertical reference plane (plane of symmetry) bisects the airplane through its centerline at an angle of 90 degrees to the FRP.

      (4) X-axis — Divided into segments in inches along the lateral plane.

      (5) Y-axis — Divided into segments in inches along the longitudinal plane. There is a Y-axis subsystem designation for all subsystems.

      (6) Z-axis — Divided into segments in inches along the vertical plane.

   b. Wing Subsystem Designations.

      (1) X_{cw} — This subsystem designation refers to the center, or constant, section of the wing. It consists of stations in inches, parallel to the centerline of the airplane and extending outboard 69.5 inches from its origin at the airplane centerline to its terminus at the dihedral break.

      (2) X_{w} — This wing subsystem designation denotes stations in inches, parallel to the centerline of the airplane and perpendicular to the WRP, beginning at the dihedral break and extending outboard indefinitely.

(3) X_f This designation represents stations in inches, located perpendicular to the wing flap hinge line.

(4) X_{fs} This designation is both a wing and a horizontal stabilizer station numbering subsystem, representing stations in inches located perpendicular to their front spars. In the wing, the point of origin is the dihedral break.

c. Horizontal Stabilizer Subsystem Designations.

(1) X_e This designation refers to stations in inches, located perpendicular to the elevator hinge line.

(2) X_{et} This subsystem designation represents stations in inches, located perpendicular to the elevator tab hinge line.

(3) X_{fs} This designation represents stations in inches, located perpendicular to the front spar. The point of origin is the centerline of the fuselage.

(4) X_h This subsystem designation represents the stations in the horizontal stabilizer system. The subsystem's point of origin is at the fuselage centerline.

d. Vertical Stabilizer Subsystem Designations.

(1) Z_v This subsystem designation denotes the stations in the vertical stabilizer system. Its origin is located 47 inches above the FRP at fuselage station 1464.2. The stations in this subsystem are segments divided into inches, parallel to the FRP.

(2) Z_{cs} This designation represents stations in inches along the center spar of the vertical stabilizer. The stations are located perpendicular to the center spar and originate at Z_v.

(3) Z_{fs} This subsystem designation represents the front spar system of the vertical stabilizer. It consists of stations divided into inches, located perpendicular to the front spar and originating at Z_v.

(4) Z_{le} This subsystem designation represents stations in inches, along and parallel to the leading edge of the vertical stabilizer, originating at Z_y.

(5) Z_r This subsystem designation refers to the rudder system of the vertical stabilizer. It consists of stations divided into inches, located perpendicular to the rudder hinge line and originating at Z_v.

(6) Z_{rs} This subsystem designation refers to the rear spar system of the vertical stabilizer. It consists of stations divided into inches, located perpendicular to the rear spar and originating at Z_v.

(7) Z_{rt} This designation represents the rudder tab hinge system of the vertical stabilizer. It consists of stations divided into inches, located perpendicular to the hinge line of the rudder tab, and originating at Z_v.

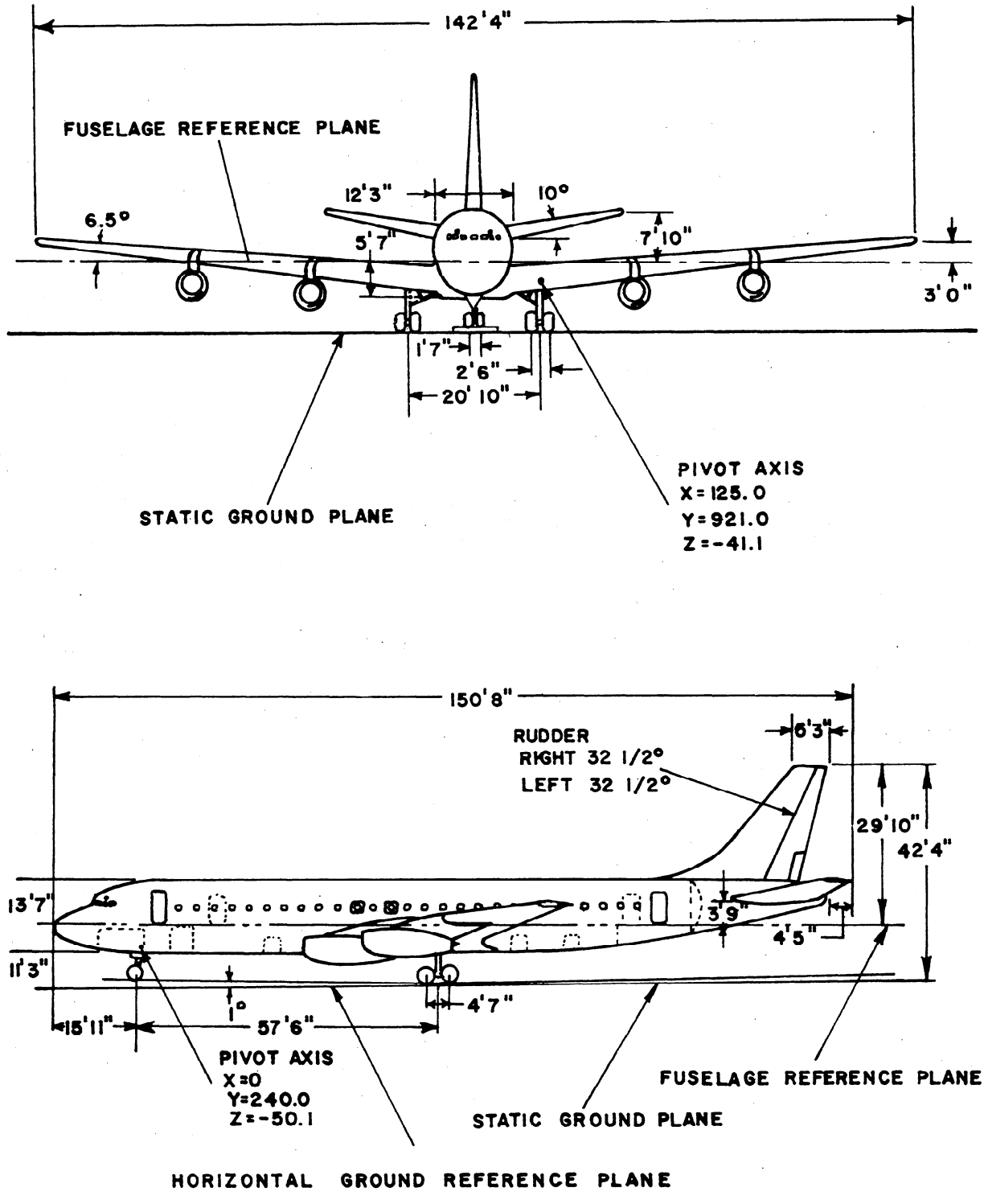
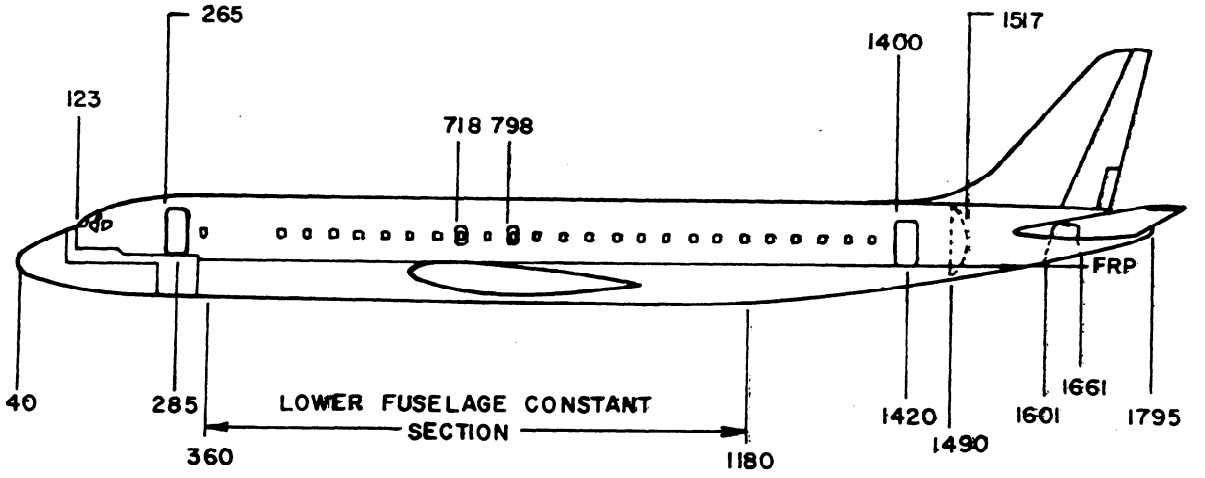


Fig. 1 Basic Dimensions



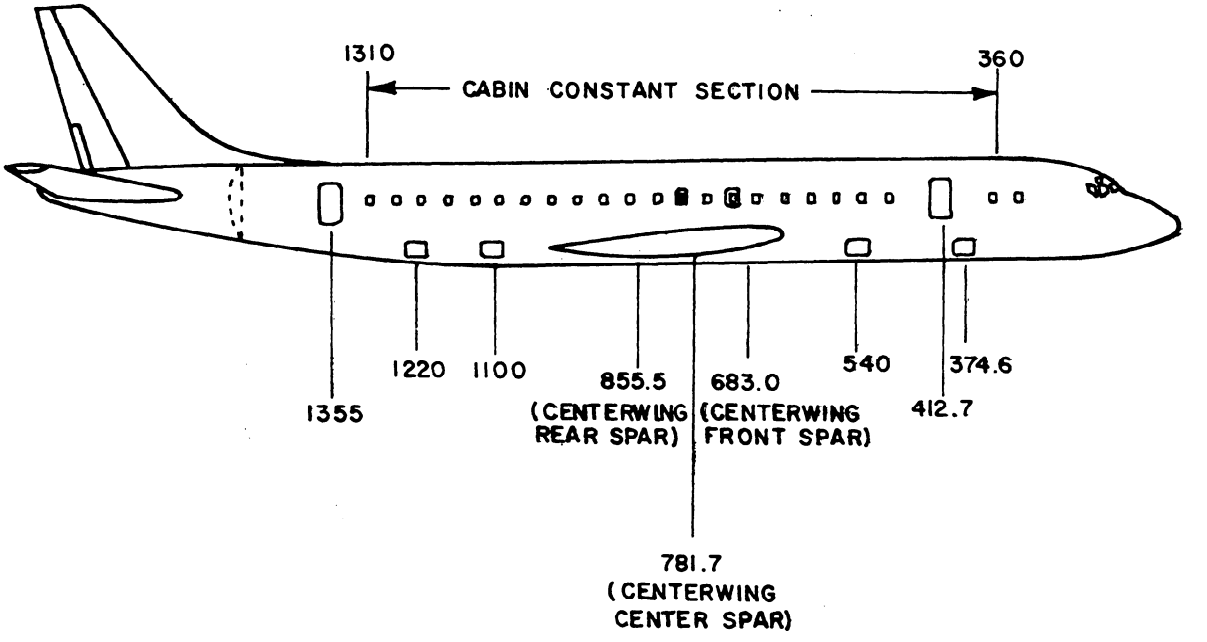
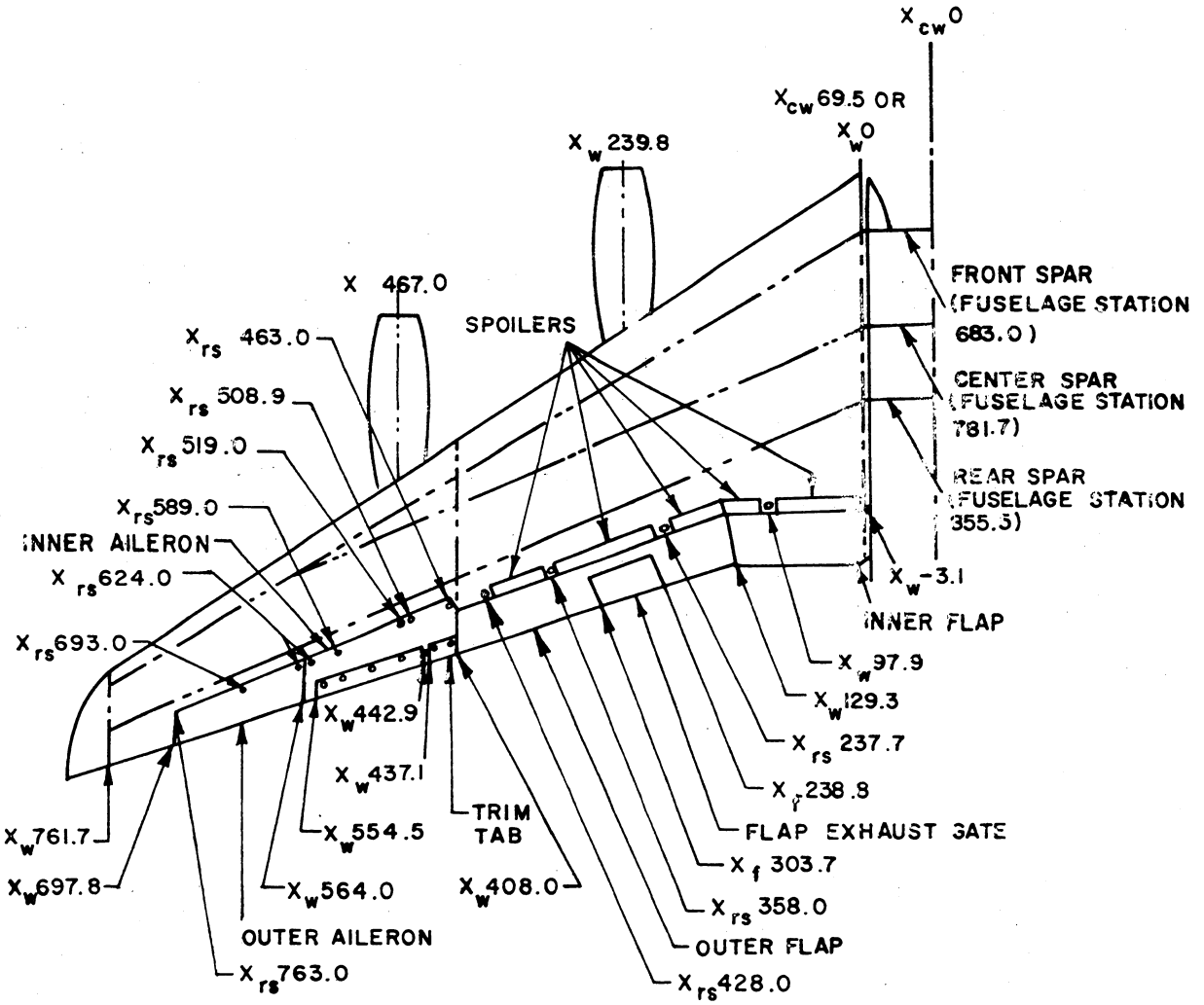
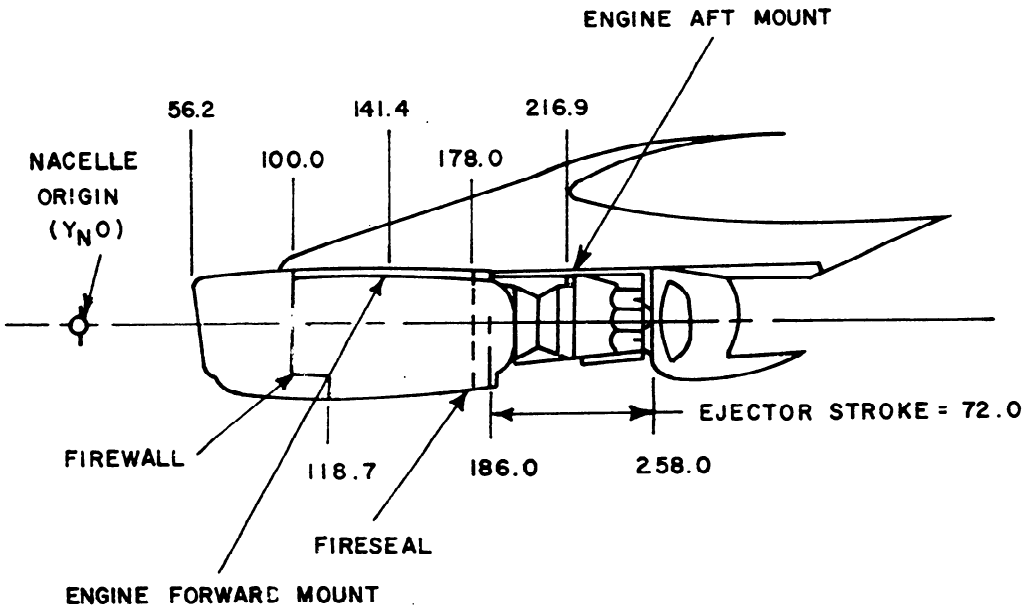


Fig. 2. Fuselage Station Charts

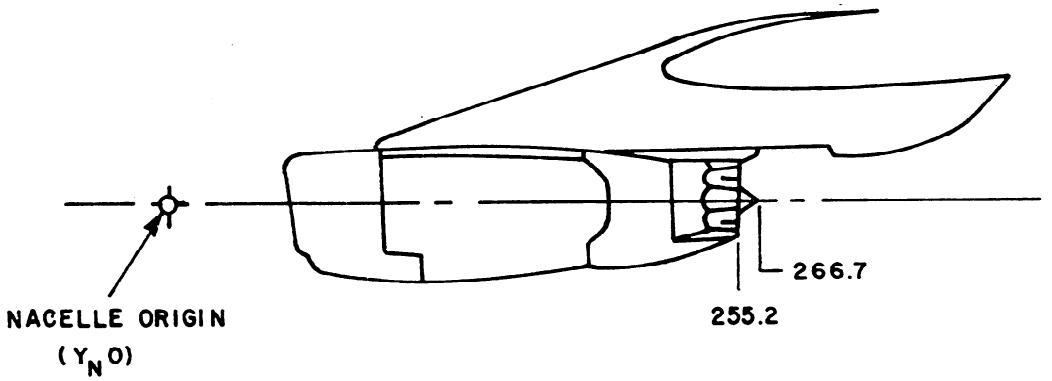


WING STATIONS

Fig 3. Wing Station Charts



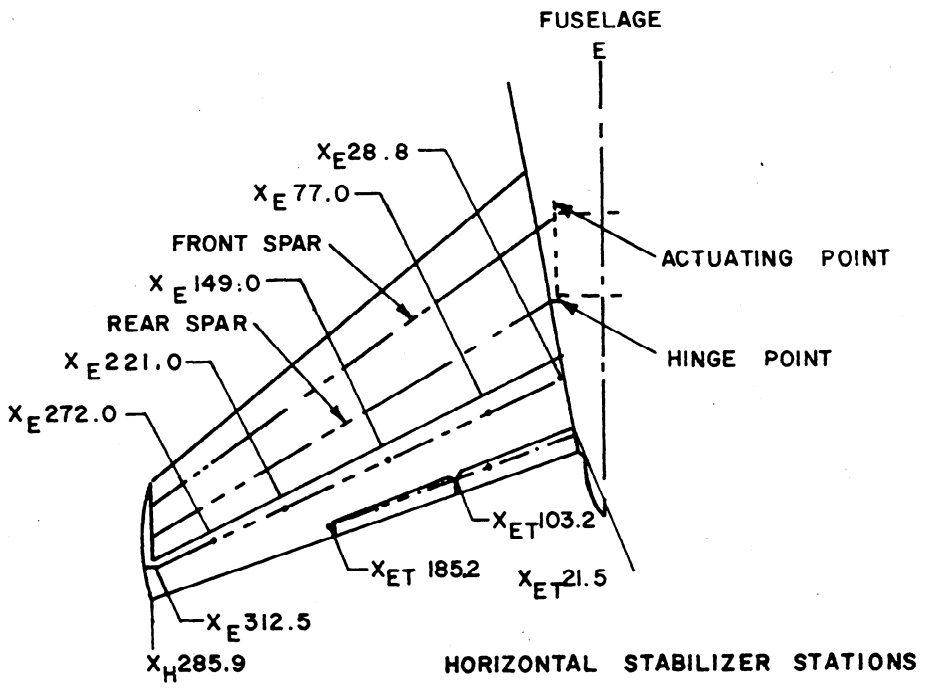
INBOARD PYLON AND NACELLE



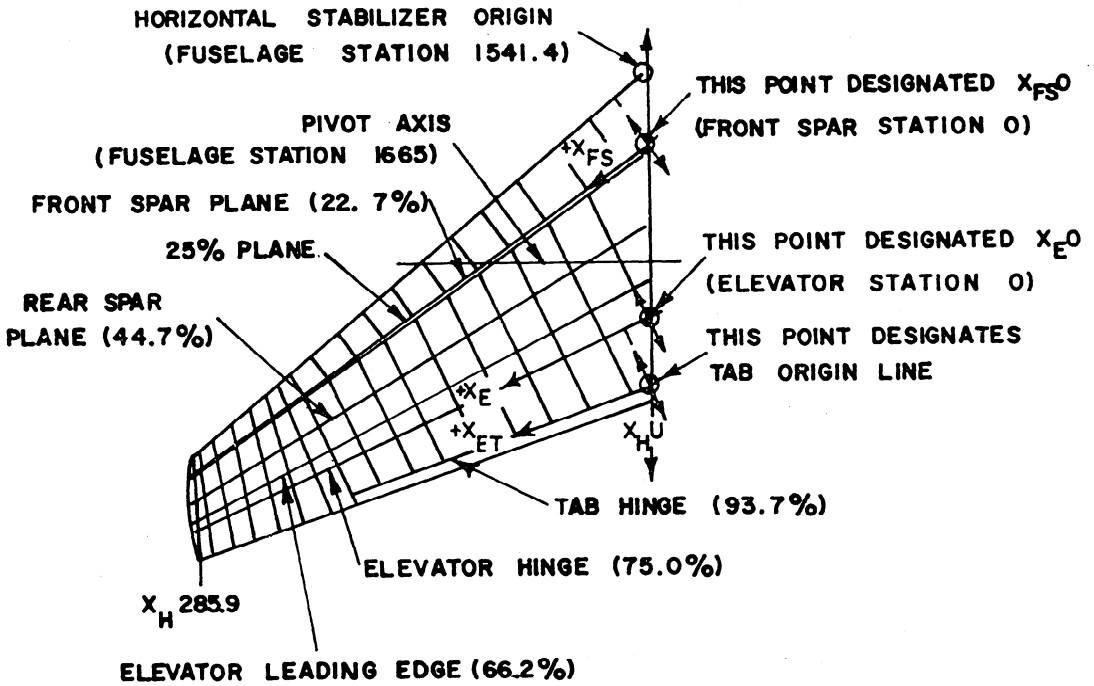
OUTBOARD PYLON AND NACELLE

(SAME AS INBOARD EXCEPT AS NOTED)

Fig 4. Pylon/Nacelle Station Charts

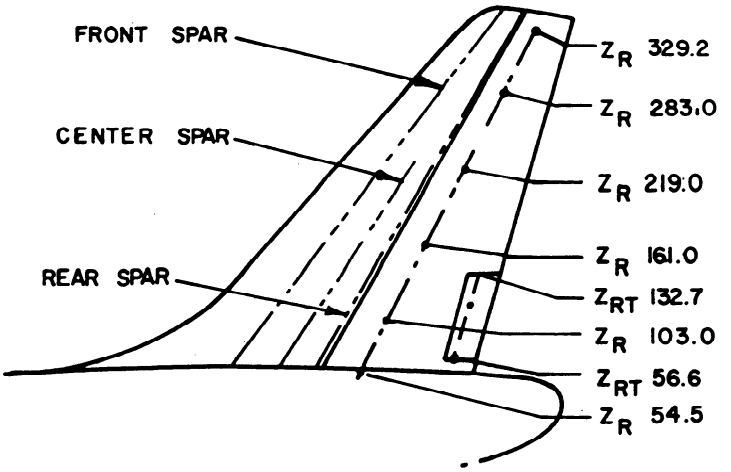


HORIZONTAL STABILIZER STATIONS

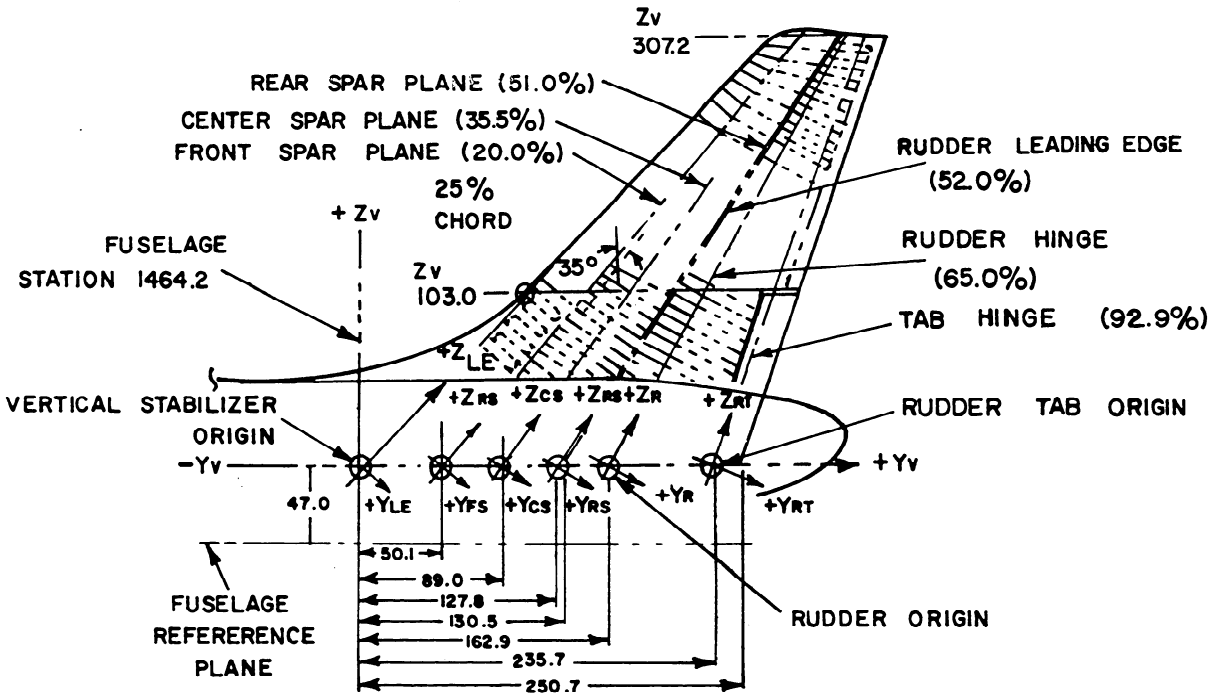


METHOD OF DESIGNATING HORIZONTAL
STABILIZER STATIONS

Fig 5. Horizontal Stabilizer Station Charts



VERTICAL STABILIZER STATIONS



METHOD OF DESIGNATION
VERTICAL STABILIZER STATIONS

Fig. 6. Vertical Stabilizer Station Charts

STRUCTURAL ITEMS

1. DESCRIPTION. Five significant structural items are discussed in this appendix. If in a high time DC-8 aircraft a crack occurs in one of these items and is allowed to exist for an extended period of time, the continued airworthiness of the aircraft may be adversely affected In Figure 7, the general location of these items are described.

   a. Fuselage Aft Pressure Bulkhead

      (1) Location. Aft flat pressure bulkhead vertical angles (See Figure 8, Appendix 3).

      (2) Applicable Airworthiness Directive. None

      (3) Other Reference Documents.

         (a) Service Bulletin 53-46.

      (4) Recommendations

         (a) Accomplish Service Bulletin 53-46.

         (b) Perform subsequent periodic inspections starting at a later date to insure continued structural integrity.

   b. Freon Compressor Exhaust Door Opening.

      (1) Location. Below forward passenger door at longeron 29 (See Figure 9, Appendix 3).

      (2) Applicable Airworthiness Directive. None

      (3) Other Reference Data. None

      (4) Probable Consequences. Extensive cracking around the freon compressor exhaust door opening may lead to more serious structural damage.

      (5) Recommendations. Periodically inspect to assure continued structural integrity.

   c. Forward Passenger Door Area.

      (1) Location. Forward fuselage, left hand side (See Figure 10, Appendix 3).

      (2) Applicable Airworthiness Directive. None.

      (3) Other Reference Data. None

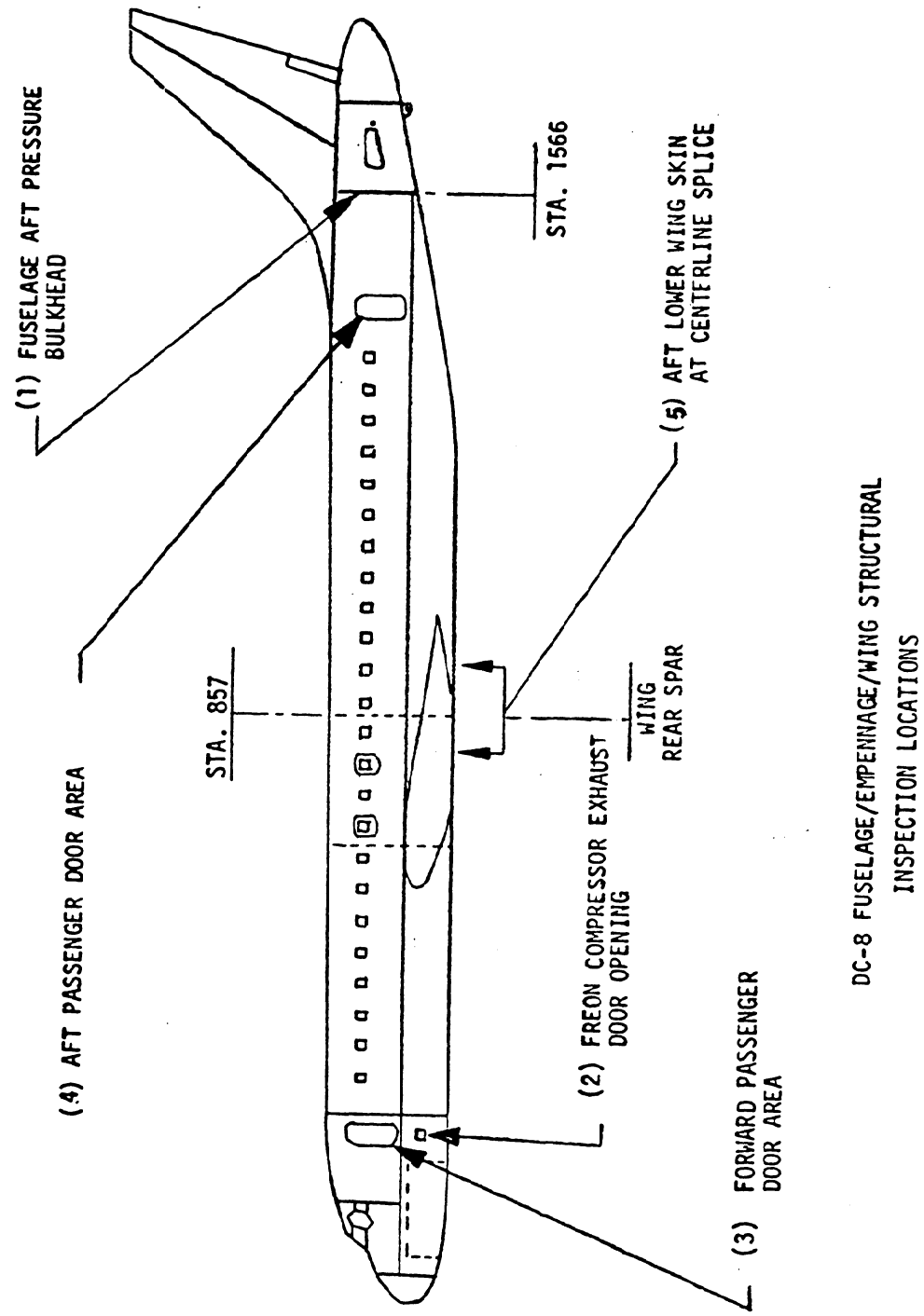


Fig. 7 DC-8 Structural Inspection Locations

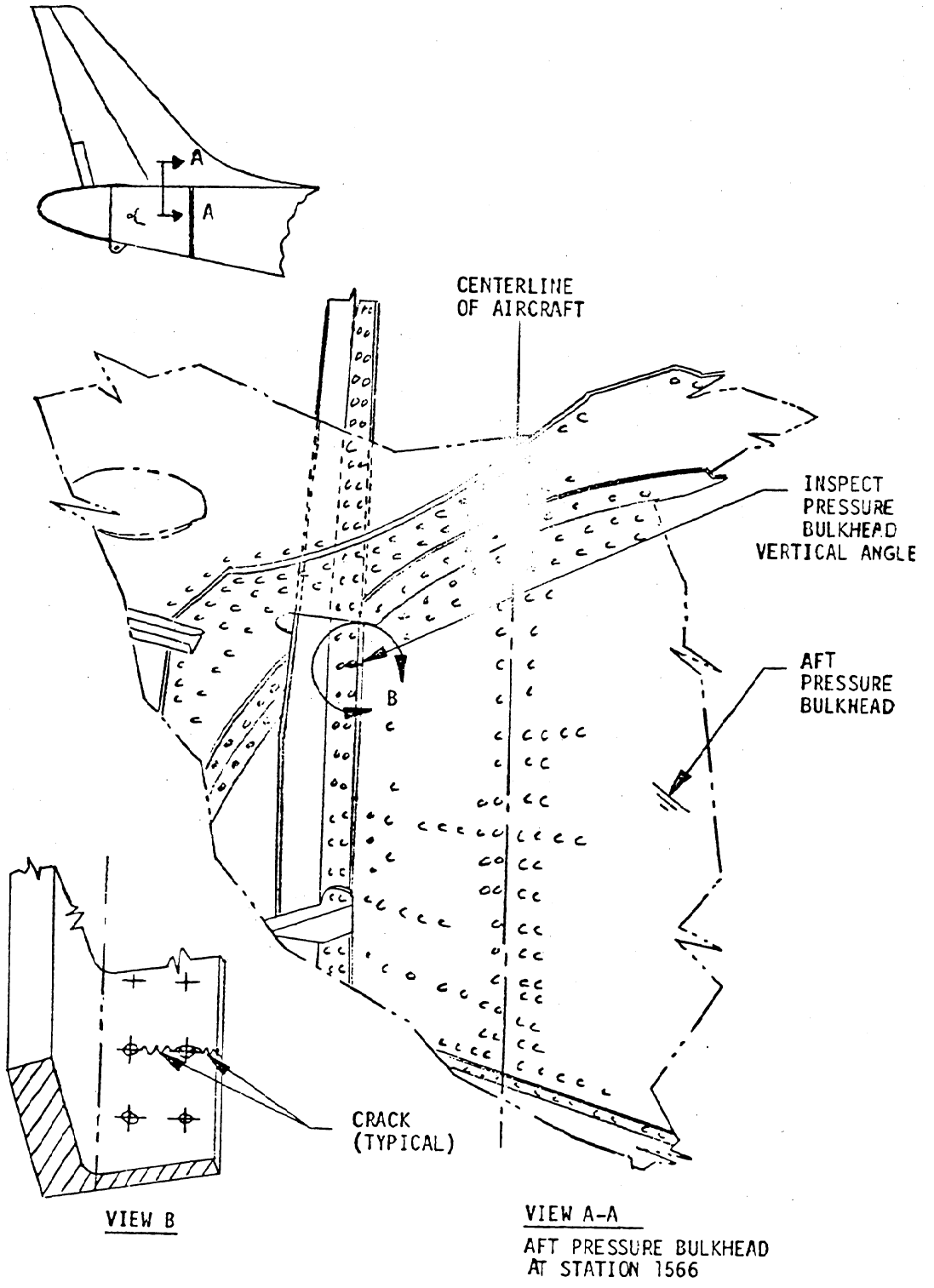
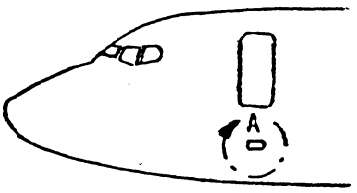
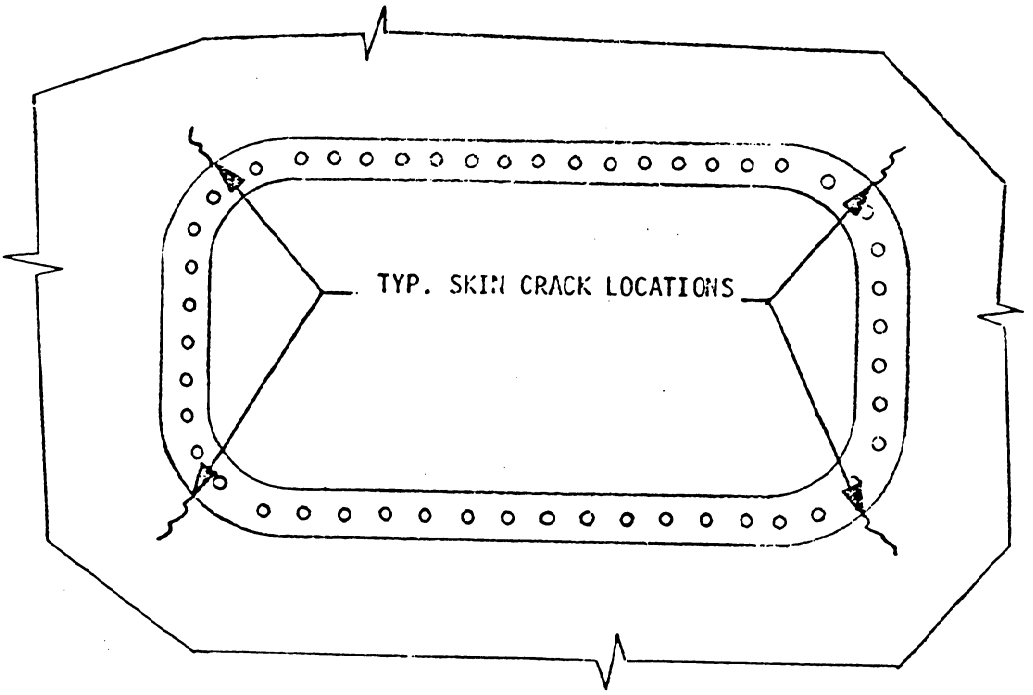


Fig. 8 Fuselage Aft Pressure Bulkhead





VIEW A

Fig. 9 Freon Compressor Exhaust Door Opening

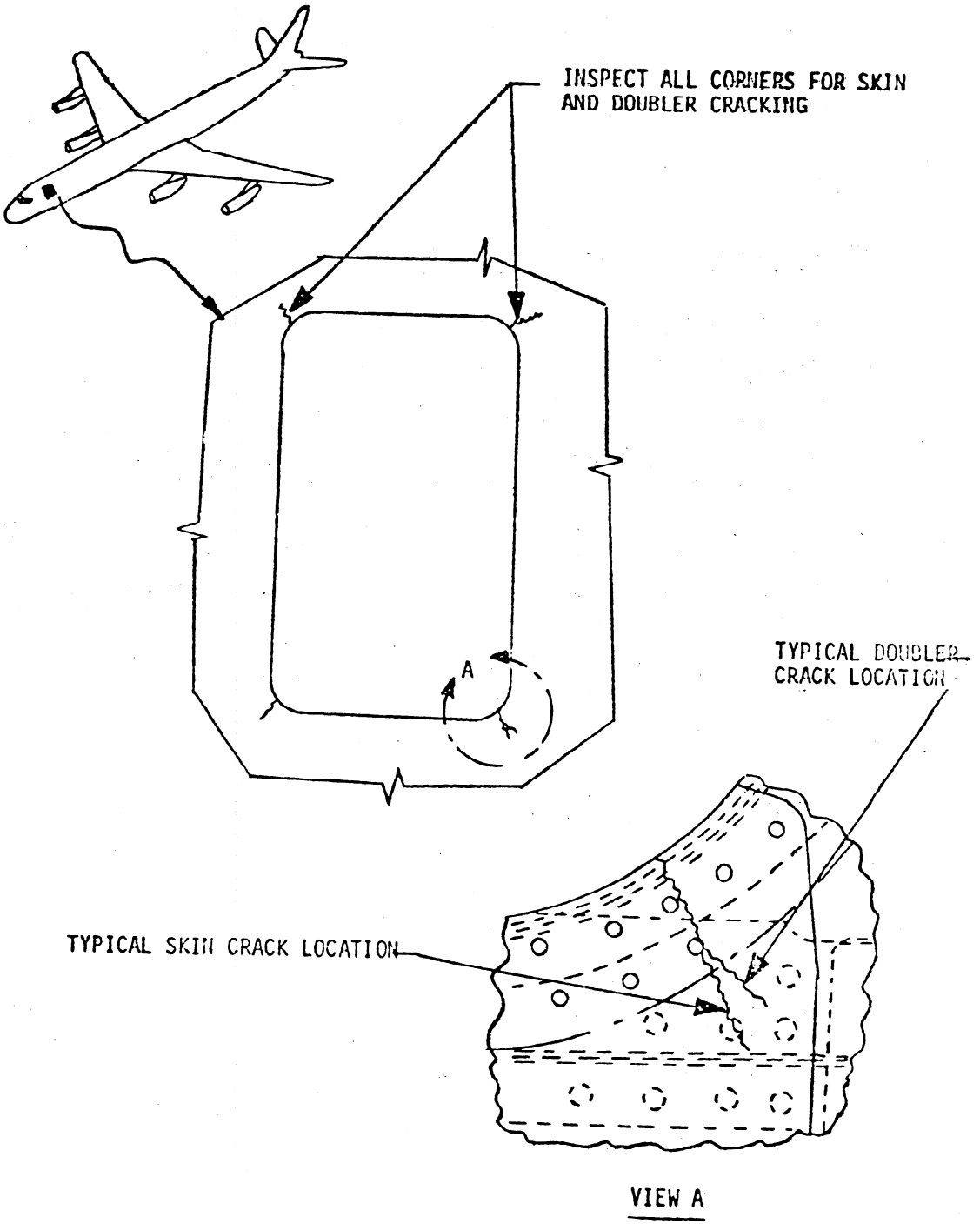


Fig. 10 Forward Passenger Door Areas

(4) Probable Consequences. Extensive fuselage cracks in this area may lead to more serious structural damage.

(5) Recommendations. Periodically inspect to assure continued structural integrity.

d. Aft Passenger Door Area.

(1) Location. Aft fuselage, left hand side(see Figure 11, Appendix 3)

(2) Applicable Airworthiness Directive. None

(3) Other Reference Data. None

(4) Probable Consequence. Extensive fuselage cracks in this may lead to more serious damage.

(5) Recommendation. Periodically inspect fuselage skin around door cutout to assure continued structural integrity.

e. Aft Lower Wing Skin at Centerline Splice.

(1) Location. Aft lower wing skin at the centerline splice plate attach to the rear spar cap. (See Figure 12, Appendix 3)

(2) Applicable Airworthiness Directive. None

(3) Other Reference Documents. None

(4) Probable Consequences. Crack extension in other area can significantly reduce the structural integrity of the wing.

(5) Recommendation.

(a) Periodically inspect to assure continued structural integrity.

(b) Perform preventive rework in this area equivalent to Service Bulletin 57-70 at an appropriate later date depending on the airplane model.

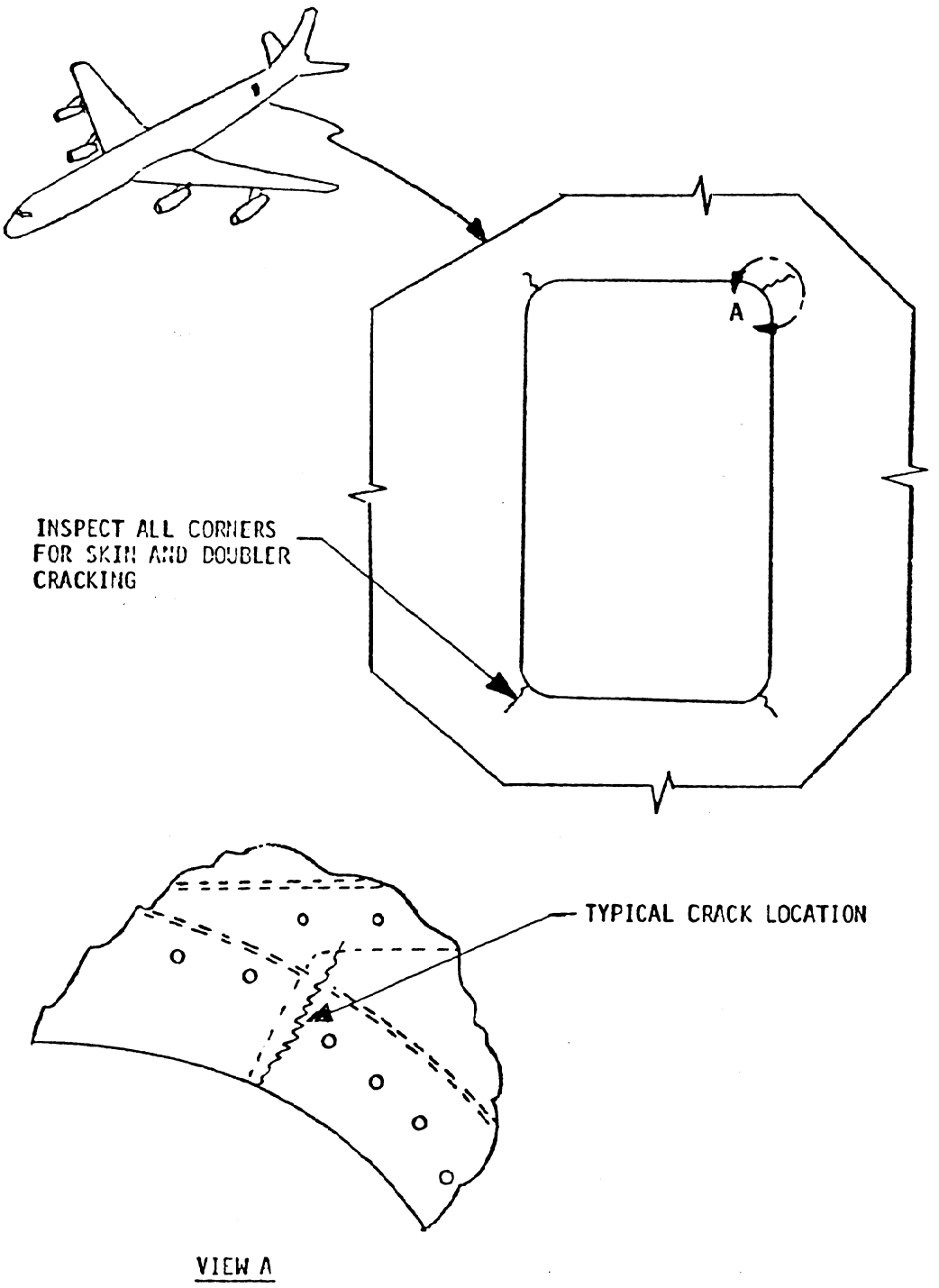


Fig. 11 Aft Passenger Door Area

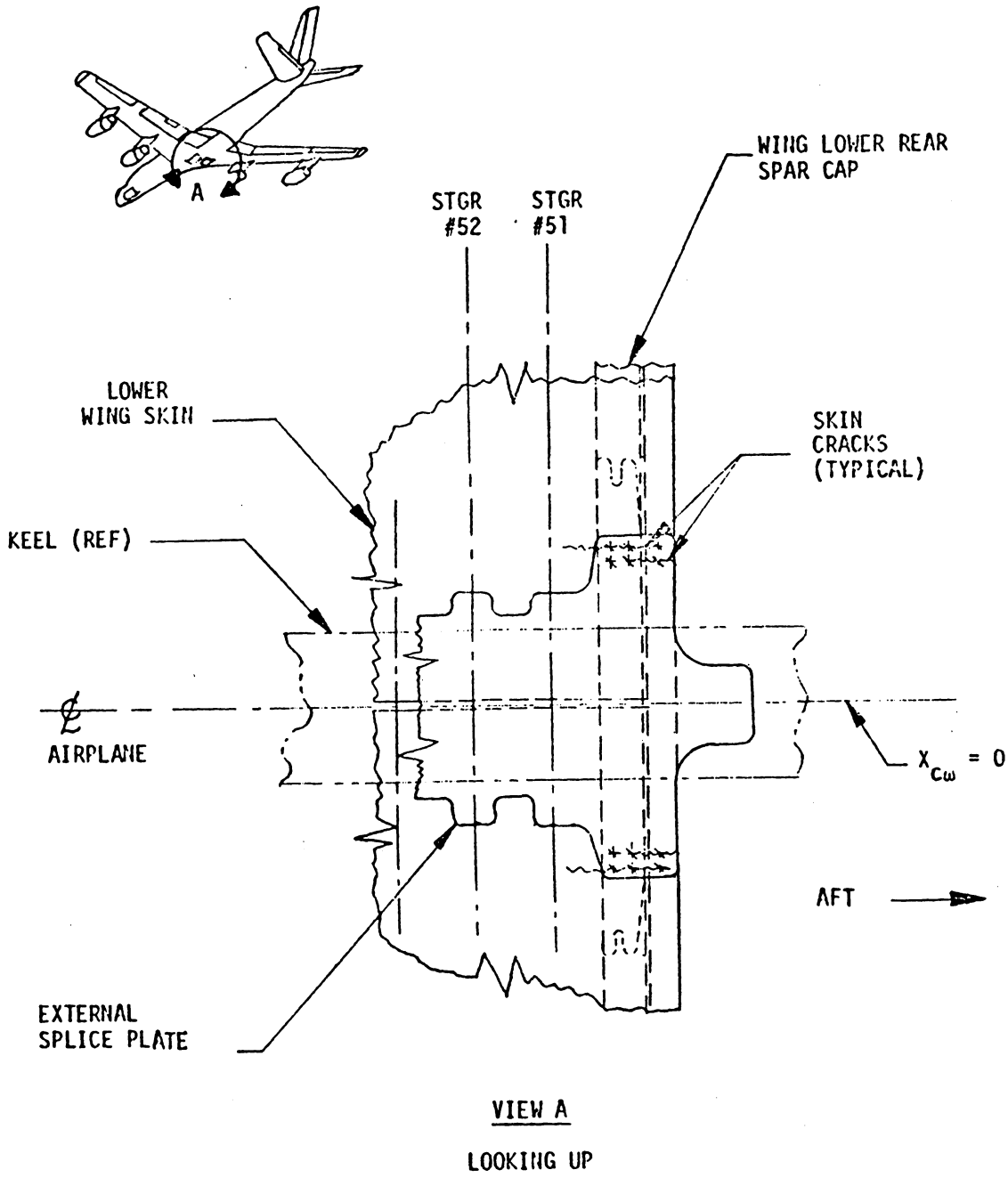


Fig. 12. Aft Lower Skin at Centerline Splice

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Washington, D.C. 20591

Official Business

PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
FEDERAL AVIATION
ADMINISTRATION
DOT 515